Slavomír Hanzely

linkedin.com/in/slavomirhanzely
slavomir-hanzely.github.io
slavomir.hanzely@kaust.edu.sa
+421 948 555 355

EDUCATION

King Abdullah University of Science and Technology, Saudi Arabia   2023
Applied Mathematics and Computational Sciences, Ph.D.   (expected)
Topic: Optimization for Machine Learning, group of Peter Richtárik

Applied Mathematics and Computational Sciences, MSc.   2020
Relevant courses: Federated Learning, Big Data Optimization, Advanced Probability

Comenius University, Slovakia, **Computer Science, BSc.**   2019
Superfluous amount of courses:
- 1st year: 95 credits (recommended amount is 60), including master's courses
- Until graduation passed 7 master courses and unofficially passed (due to exceeding the maximal number of credits) 8 extra courses
- Passed finals year in advance and with the best grades

RESEARCH

- Convergence of First-Order Algorithms for Meta-Learning, arxiv 2023
  Mishchenko, Hanzely, Richtárik,

- A Damped Newton Method Achieves Global $\mathcal{O}(1/k^2)$ Convergence Rate, NeurIPS 2022
  Hanzely, Kamzolov, Pasechnyuk, Gasnikov, Richtárik, Takáč

- Distributed Newton-Type Methods with Communication Compression, arxiv 2022
  Islamov, Qian, Hanzely, Safaryan, Richtárik

- ZeroSARAH: Nonconvex Optimization with Zero Full Gradient Computation arxiv 2021
  Li, Hanzely and Richtárik

- Lower Bounds & Optimal Algorithms for Personalized Federated Learning, NeurIPS 20
  F. Hanzely, S. Hanzely, Horváth and Richtárik

- Adaptive Learning of the Optimal Mini-Batch Size of SGD, OPT-ML, NeurIPS 2020
  Alfarra, Hanzely, Albasyoni, Ghanem and Richtárik

AWARDS

King Abdullah University of Science and Technology
- Dean's Award (3 consecutive years)
- Ph.D. scholarship of USD 75,000/year
- MSc. scholarship of USD 70,000/year

Vojtech Jarnik International Mathematical Competition
2017: **8-10th place** (39 universities participated)

Mathematical Olympiad
2016: **3rd place**, Slovak national round
      International Mathematical Olympiad (IMO) participation
2015: **bronze medal**, Middle European Mathematical Olympiad (MEMO)

WORK EXPERIENCE

Flatiron Institute, Simons Foundation   June 2022 – July 2022
Research associate (group of Robert Gower)**:** My task was to investigate ML loss reformulations and design fast variance reduced algorithms.

Mohamed bin Zayed University of AI   Feb 2022 – Apr 2022
Research assistant (group of Martin Takáč)**:** Developing fast second-order optimization algorithms that are both practical and provably globally-convergent.

Wincent (crypto trading company)   Jun 2020 – Aug 2020
Research intern / software engineer: My goal was to analyze, model and design practical algorithms to optimize resource allocation of the company and implement the developed methods under various constraints.

Mathematical Olympiad   2017 – 2019
- marking problems at the national round (3 times)
- organizing national selection camp for the International Mathematical Olympiad
  - creating the problem sets for a day and marking the solutions (3 times)
  - restructuring format of the camp and creating all problem sets (team of 4 people)

EXTRA-CURRICULAR ACTIVITIES

Trojsten (nonprofit organization)   2016 – 2019
- preparing competitions and camps (in Math, CS) for talented high school students
  - co-organized 14 competitions (3 as a head organizer)
  - co-organized 20 camps (4 as a head organizer)
  - problem selection: 20 problem sets, $\sim$200 hours of work
  - marking solutions: $\sim$600 solutions, $\sim$150 hours of work
- lecturing: delivering 38 lectures (including a half-day lecture)

TECHNICAL SKILLS

Research
- topics: Federated Learning, Higher-Order Algorithms, Stochastic Optimization
- reviewing: ICML (conference), NeurIPS (conference), TLMR (journal)
- qualities: patience, persistence

Programming
- advanced in Python, PyTorch, Julia, C/C++, Bash
- experience with Matlab, R, Haskell, Java

Cross-cultural communication
- co-organized large ultimate frisbee tournament
  (largest tournament in MENA region & first mixed tournament in Saudi Arabia)
- studying and working in various international communities
- organizing a research group seminar
- organizing a research session at IFORS 2023

HOBBIES

Sport
- ultimate frisbee - competing on international tournaments
  - Slovak national team: EU Youth Championship 2017, EU Youth Cup 2017
  - KAUST university team: MENA 19, MENA 21, MENA 22, Egyptian Open 22
- individual sports: running, cycling, swimming, rock climbing
- in the past: ice-hockey, floorball, karate

Outdoor puzzle races
- participated in 26 puzzle races, including 3 extreme ones (overnight in winter)